

**Work Order ID 156806****\*156806\***

Page 1

Wednesday, February 08, 2017 9:10:11 AM

Item ID: 646.3014

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Blade

Start Date: 1/18/2017 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 2/8/2017 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals: Process Plan: **DAS 21 9-89** Date: **FEB 09 2017**

Tooling:

Date:

Run Start **\*NR1\***

QC: Date: SPC (Y/N):

Date:

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr |
|----------|--------------|
| 646.3000 | N/C          |

100

0.00

**\*100\***

BAND SAW

Bandsaw.

Memo

0.10

Jeaspa Bandsaw

Cut Blank at 2.670"

10

Ø

DAS  
20  
9-89

17-02-22

110

0.16

**\*110\***

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.47

HAAS CNC vertical machine #1

1-Machine per folio FB150

DWG REV: N/CFOLIO REV: AA

10

Ø

DAS  
20  
9-89

17-02-22

DAS  
14  
9-89

17-02-22

2- deburr and break all sharp edges except otherwise noted

KNIFE EDGE MUST BE SHARPENED USING STONE, REMOVE ALL  
BURRS ON CUTTING EDGE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                             |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|---------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                             |  |  |
| Date : _____                                                 |  | Step #: _____                                                                                                                                                                      |  | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  | <b>MRB (QSI042) Approval</b><br><br><div style="border: 1px solid black; height: 100px; margin-top: 10px;"></div>                           |  |  |
| <b>Description Work Order Deviation</b>                      |  |                                                                                                                                                                                    |  | <b>Disposition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |                                                                                                                                             |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                             |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | <b>Completed By</b><br><br><div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div>                                     |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | <b>Lead hand / Supervisor<br/>Approval Verification</b><br><br><div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div> |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | <b>QC / QA Coordinator<br/>Approval</b><br><br><div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div>                 |  |  |

| Root Cause                                  |                                                |                                                 |                                                            | FAULT CATEGORY                                 |                                               |  |  |
|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|--|--|
| <input type="checkbox"/> Environment        | <input type="checkbox"/> No Re-verification    | <input type="checkbox"/> Pressure/Forced        | <input type="checkbox"/> Temperature/Cure                  | <input type="checkbox"/> Power Loss/Surge      | <input type="checkbox"/> Positioned Wrong     |  |  |
| <input type="checkbox"/> Design             | <input type="checkbox"/> Operator              | <input type="checkbox"/> Bending                | <input type="checkbox"/> Set-up                            | <input type="checkbox"/> Folio/Program         | <input type="checkbox"/> Outside Dimensions   |  |  |
| <input type="checkbox"/> Doc/Data           | <input type="checkbox"/> Offset/Setup          | <input type="checkbox"/> Centre Not Concentric  | <input type="checkbox"/> BOM/Route                         | <input type="checkbox"/> Grain                 | <input type="checkbox"/> Over/Under tolerance |  |  |
| <input type="checkbox"/> Equip/Tooling      | <input type="checkbox"/> Supplier              | <input type="checkbox"/> Cracks                 | <input type="checkbox"/> Broken/Damage/Defect              | <input type="checkbox"/> Weld                  | <input type="checkbox"/> Part Incorrect       |  |  |
| <input type="checkbox"/> Handling/Pre       | <input type="checkbox"/> Training              | <input type="checkbox"/> Crimp/Kink/Ripple/Wave | <input type="checkbox"/> Inspection Incomplete/Unqualified | <input type="checkbox"/> Wrong Stock Pulled    | <input type="checkbox"/> Part Lost/Missing    |  |  |
| <input type="checkbox"/> Material           | <input type="checkbox"/> Use for Testing       | <input type="checkbox"/> Cuffs                  | <input type="checkbox"/> Contamination                     | <input type="checkbox"/> Out of Sequence       | <input type="checkbox"/> Part Moved           |  |  |
| <input type="checkbox"/> Internal Transport | <input type="checkbox"/> Poor Information      | <input type="checkbox"/> Crushing               | <input type="checkbox"/> Countersink                       | <input type="checkbox"/> Off-set               | <input type="checkbox"/> Drawing              |  |  |
| <input type="checkbox"/> Tribal Knowledge   | <input type="checkbox"/> Rushing               | <input type="checkbox"/> Heat Treat             | <input type="checkbox"/> Cut Too Short                     | <input type="checkbox"/> Mislabeled            | <input type="checkbox"/> Finish               |  |  |
| <input type="checkbox"/> LOA                | <input type="checkbox"/> Product Improvement   | <input type="checkbox"/> Wave/Twist in Tube     | <input type="checkbox"/> Instructions Incomplete/Unclear   | <input type="checkbox"/> Fit/Function          | <input type="checkbox"/> Misread              |  |  |
| <input type="checkbox"/> Substation         | <input type="checkbox"/> Process Improvement   | <input type="checkbox"/> Marks/Chatter          | <input type="checkbox"/> Drill Holes                       | <input type="checkbox"/> Misaligned/off center | <input type="checkbox"/> Turning Sequence     |  |  |
| <input type="checkbox"/> Past Expiry Date   | <input type="checkbox"/> Manufacturing Process | OTHER : _____                                   |                                                            |                                                |                                               |  |  |
| <input type="checkbox"/> Misidentified      | <input type="checkbox"/> Past Due              |                                                 |                                                            |                                                |                                               |  |  |

**Work Order ID 156806**

Wednesday, February 08, 2017 9:10:11 AM

**\*156806\***

Page 2

Item ID: 646.3014

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: Blade

Start Date: 1/18/2017

Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 2/8/2017

Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals:

Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start

**\*NR1\***

QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

**\*120\***

QC

Memo

0.03

Quality Control

10

Ø

DAS  
14  
9-89

17/02/23

130

QC8- Inspect parts - second check

0.00

**\*130\***

QC

Memo

0.03

Quality Control

10

Ø

DAS  
44  
9-89

17-02-25

140

Outsource process - Heat Treat

0.00

**\*140\***

Outsource1

Memo

80.00

Outsource process - Heat Treat

HEAT TREAT AS PER DWG, SEE NOTE #3

ISSUE P/O: 35475

10

MAR 01 2017

DAS  
13  
9-89



## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only

|                                                                          |                                                |                                                 |                                                            |                                                                          |                                               |                                              |                                      |                                              |  |
|--------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------|--------------------------------------|----------------------------------------------|--|
| Work Order: _____                                                        |                                                | DISPOSITION                                     |                                                            | AGAINST DEPARTMENT/PROCESS                                               |                                               |                                              |                                      |                                              |  |
| Part No. _____                                                           |                                                | Rework <input type="checkbox"/>                 |                                                            | Skid-tube <input type="checkbox"/>                                       | Cross tube <input type="checkbox"/>           | Water Jet <input type="checkbox"/>           | Engineering <input type="checkbox"/> |                                              |  |
| NCR No. _____                                                            |                                                | Scrap <input type="checkbox"/>                  |                                                            | Machining <input type="checkbox"/>                                       | Small Fab <input type="checkbox"/>            | Prod. Eng. Coord. <input type="checkbox"/>   | Quality <input type="checkbox"/>     |                                              |  |
|                                                                          |                                                | Use-as-is <input type="checkbox"/>              |                                                            | Thermoforming <input type="checkbox"/>                                   | Finishing <input type="checkbox"/>            | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>       |                                              |  |
|                                                                          |                                                | Suspected Unapproved <input type="checkbox"/>   |                                                            | Large Fab <input type="checkbox"/>                                       | Composite <input type="checkbox"/>            | Supplier <input type="checkbox"/>            |                                      |                                              |  |
| Date :                                                                   |                                                | Step #:                                         |                                                            |                                                                          | QTY Effective :                               |                                              |                                      | MRB (QSI042) Approval                        |  |
| Description Work Order Deviation                                         |                                                |                                                 |                                                            | Disposition                                                              |                                               |                                              |                                      | Completed By                                 |  |
| <div style="border: 1px solid black; height: 150px; width: 100%;"></div> |                                                |                                                 |                                                            | <div style="border: 1px solid black; height: 150px; width: 100%;"></div> |                                               |                                              |                                      | Lead hand / Supervisor Approval Verification |  |
|                                                                          |                                                |                                                 |                                                            |                                                                          |                                               |                                              |                                      | QC / QA Coordinator Approval                 |  |
|                                                                          |                                                |                                                 |                                                            |                                                                          |                                               |                                              |                                      |                                              |  |
| Root Cause                                                               |                                                | FAULT CATEGORY                                  |                                                            |                                                                          |                                               |                                              |                                      |                                              |  |
| Environment <input type="checkbox"/>                                     | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                | Positioned Wrong <input type="checkbox"/>     |                                              |                                      |                                              |  |
| Design <input type="checkbox"/>                                          | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                   | Outside Dimensions <input type="checkbox"/>   |                                              |                                      |                                              |  |
| Doc/Data <input type="checkbox"/>                                        | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                           | Over/Under tolerance <input type="checkbox"/> |                                              |                                      |                                              |  |
| Equip/Tooling <input type="checkbox"/>                                   | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                            | Part Incorrect <input type="checkbox"/>       |                                              |                                      |                                              |  |
| Handling/Pre <input type="checkbox"/>                                    | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                              | Part Lost/Missing <input type="checkbox"/>    |                                              |                                      |                                              |  |
| Material <input type="checkbox"/>                                        | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                 | Part Moved <input type="checkbox"/>           |                                              |                                      |                                              |  |
| Internal Transport <input type="checkbox"/>                              | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                         | Drawing <input type="checkbox"/>              |                                              |                                      |                                              |  |
| Tribal Knowledge <input type="checkbox"/>                                | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                      | Finish <input type="checkbox"/>               |                                              |                                      |                                              |  |
| LOA <input type="checkbox"/>                                             | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                    | Misread <input type="checkbox"/>              |                                              |                                      |                                              |  |
| Substation <input type="checkbox"/>                                      | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                           | Turning Sequence <input type="checkbox"/>     |                                              |                                      |                                              |  |
| Past Expiry Date <input type="checkbox"/>                                | Manufacturing Process <input type="checkbox"/> |                                                 |                                                            |                                                                          |                                               |                                              |                                      |                                              |  |
| Misidentified <input type="checkbox"/>                                   | Past Due <input type="checkbox"/>              | OTHER :                                         |                                                            |                                                                          |                                               |                                              |                                      |                                              |  |



**Work Order ID 156806**

Wednesday, February 08, 2017 9:10:11 AM

**\*156806\***

Page 3

Item ID: 646.3014

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Blade

Start Date: 1/18/2017 Start Qty: 10.00 **\*10\***

Cust Item ID:

Required Date: 2/8/2017 Req'd Qty: 10.00 **\*10\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                      | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|-----------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 150                            | Receive & Inspect for Damage & Mat'l Certs    | 0.00                 |         |        |              |               |               |                  |                |
| <b>*150*</b>                   |                                               |                      |         |        |              |               |               |                  |                |
| Packaging                      | Memo                                          | 0.03                 |         |        |              |               |               |                  |                |
| Packaging                      |                                               |                      |         |        |              |               |               |                  |                |
| 155                            | QC5- Inspect part completeness to step on W/O | 0.00                 |         |        |              |               |               |                  |                |
| <b>*155*</b>                   |                                               |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                          | 0.03                 |         |        |              |               |               |                  |                |
| Quality Control                |                                               |                      |         |        |              |               |               |                  |                |
| 160                            | Spray Painting per QSI005 4.2                 | 0.00                 |         |        |              |               |               |                  |                |
| <b>*160*</b>                   |                                               |                      |         |        |              |               |               |                  |                |
| SprayPaint                     | Memo                                          | 0.05                 |         |        |              |               |               |                  |                |
| Spray Painting                 | PRIME AS PER DWG, SEE NOTE #4                 |                      |         |        |              |               |               |                  |                |
|                                | PRIMER BATCH: <u>136615</u>                   |                      |         |        |              |               |               |                  |                |

10x SP17-03-9.

DAS  
38  
9-88

10

MAR 10 2017

10

PAP  
17-03-10

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                              |                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                              |                       |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Step #: _____                                                                                                                                                                      | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                              | MRB (QSI042) Approval |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Disposition                                  |                       |  |
| <div style="position: absolute; bottom: 10px; left: 10px; color: blue; font-size: small;">             2/10<br/>3/2<br/>4/2           </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Completed By                                 |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Lead hand / Supervisor Approval Verification |                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | QC / QA Coordinator Approval                 |                       |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div>           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |                                                                                                                                                                                    | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div>           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Misabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |                                              |                       |  |
| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                              |                       |  |

**Work Order ID 156806**

Wednesday, February 08, 2017 9:10:11 AM

**\*156806\***

Page 4

Item ID: 646.3014

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Blade

Start Date: 1/18/2017 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 2/8/2017 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                                    | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|-------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 170                            | QC14- Inspect Spray Paint                                   | 0.00                 |         |        |              |               |               |                  | DAS<br>38<br>9-89 |
| <b>*170*</b>                   |                                                             |                      |         |        |              | 10            |               |                  | MAR 13 2017       |
| QC                             | Memo                                                        | 0.03                 |         |        |              |               |               |                  |                   |
| Quality Control                |                                                             |                      |         |        |              |               |               |                  |                   |
| 180                            | Identify as per dwg & Stock Location: <u>CC/K/02</u>        | 0.00                 |         |        |              |               |               |                  | DAS<br>6<br>9-89  |
| <b>*180*</b>                   |                                                             |                      |         |        |              | 10            |               |                  | MAR 13 2017       |
| Packaging                      | Memo                                                        | 0.02                 |         |        |              |               |               |                  |                   |
| Packaging                      | ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV*** |                      |         |        |              |               |               |                  |                   |
| 190                            | QC21- Final Inspection - Work Order Release                 | 0.00                 |         |        |              |               |               |                  |                   |
| <b>*190*</b>                   |                                                             |                      |         |        |              |               |               |                  | 17/3/14           |
| QC                             | Memo                                                        | 0.02                 |         |        |              |               |               |                  |                   |
| Quality Control                |                                                             |                      |         |        |              |               |               |                  |                   |

MAR 13 2017



DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                          |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                          |  |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | <b>MRB (QSI042) Approval</b><br><br>Completed By<br><br>Lead hand / Supervisor Approval Verification<br><br>QC / QA Coordinator Approval |  |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                          |  |  |
| SAG<br>SC<br>DB-4                                            |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                          |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                          |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                          |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                          |  |  |

| Root Cause                                  |                                                |                                                 |                                                            | FAULT CATEGORY                                 |                                               |  |  |
|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|--|--|
| Environment <input type="checkbox"/>        | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |  |  |
| Design <input type="checkbox"/>             | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |  |  |
| Doc/Data <input type="checkbox"/>           | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |  |  |
| Equip/Tooling <input type="checkbox"/>      | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |  |  |
| Handling/Pre <input type="checkbox"/>       | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |  |  |
| Material <input type="checkbox"/>           | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |  |  |
| Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |  |  |
| Tribal Knowledge <input type="checkbox"/>   | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |  |  |
| LOA <input type="checkbox"/>                | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |  |  |
| Substation <input type="checkbox"/>         | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |  |  |
| Past Expiry Date <input type="checkbox"/>   | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                   |                                                            |                                                |                                               |  |  |
| Misidentified <input type="checkbox"/>      | Past Due <input type="checkbox"/>              |                                                 |                                                            |                                                |                                               |  |  |

# Picklist Print

Wednesday, February 08, 2017 9:10:11 AM

Page 1

Work Order ID: 156806

**\*156806\***

Parent Item: 646.3014

**\*646.3014\***

Parent Item Name: Blade

Start Date: 1/18/2017

Required Date: 2/8/2017

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| MSTEEL-A2-<br>B0.500X1.250      |                        | Purchased     | No          |                     |                  | 100             | f                  | 28.0050        | 0.223       | 2.347368     |               |                |        |

**\*MSTFEI -A2-B0 500X1 250\***

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

**\*\***

3.646'

DAS

20

9-89

1702-21

Location

Loc Qty

Loc Code

MAT010

28.005

M135558

1

M136378

3.005

M136553

24

3.646'

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                            |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                            |  |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | <b>MRB (QSI042) Approval</b><br><br>Completed By _____<br><br>Lead hand / Supervisor Approval Verification _____<br><br>QC / QA Coordinator Approval _____ |  |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |                                                                                                                                                            |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                            |  |  |

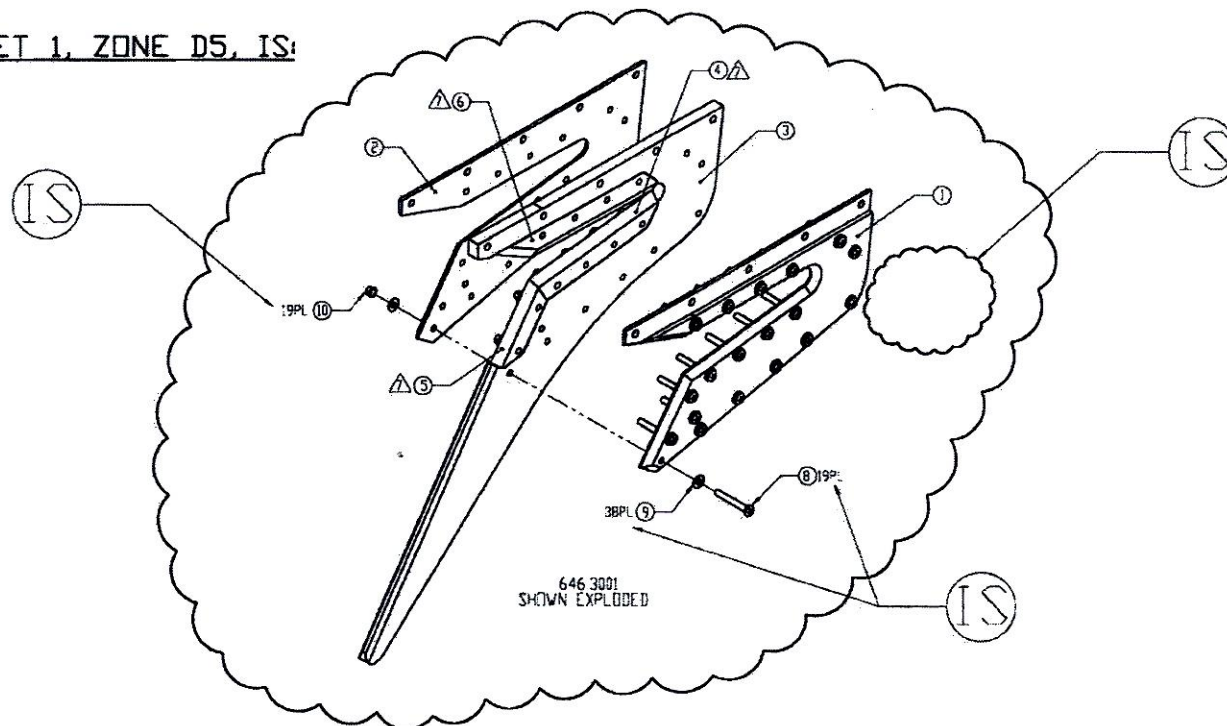
| Root Cause                                  |                                                |                                                 | FAULT CATEGORY                                             |                                                |                                               |  |
|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|--|
| Environment <input type="checkbox"/>        | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |  |
| Design <input type="checkbox"/>             | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |  |
| Doc/Data <input type="checkbox"/>           | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |  |
| Equip/Tooling <input type="checkbox"/>      | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |  |
| Handling/Pre <input type="checkbox"/>       | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |  |
| Material <input type="checkbox"/>           | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |  |
| Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |  |
| Tribal Knowledge <input type="checkbox"/>   | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |  |
| LOA <input type="checkbox"/>                | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |  |
| Substation <input type="checkbox"/>         | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |  |
| Past Expiry Date <input type="checkbox"/>   | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                   |                                                            |                                                |                                               |  |
| Misidentified <input type="checkbox"/>      | Past Due <input type="checkbox"/>              |                                                 |                                                            |                                                |                                               |  |





|                                                                |                                                                                           |                                                      |                       |                 |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------|-----------------|
| <b>APICAL</b><br>INDUSTRIES, INC.                              | ENGINEERING CHANGE NOTICE NO. 02195                                                       |                                                      | SHEET 1 OF 4          |                 |
|                                                                | DWG NO. 646.3000                                                                          | REV: N/C                                             | PREPARED BY S. HUFF   | DATE: 01/05/09  |
|                                                                | EFFECT ON DWG<br><input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC. |                                                      |                       |                 |
|                                                                | DWG TITLE: LOWER CUTTER ASSY                                                              |                                                      |                       |                 |
| APPROVED BY: ENGR <i>[Signature]</i>                           |                                                                                           | MFG <i>[Signature]</i>                               | QC <i>[Signature]</i> | EFF: NEXT ORDER |
| TRANSACTION CODES (TC):<br>A-ADD C-CREATE<br>R-REVISE D-DELETE |                                                                                           | REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS |                       |                 |

SHEET 1, ZONE D5, IS:

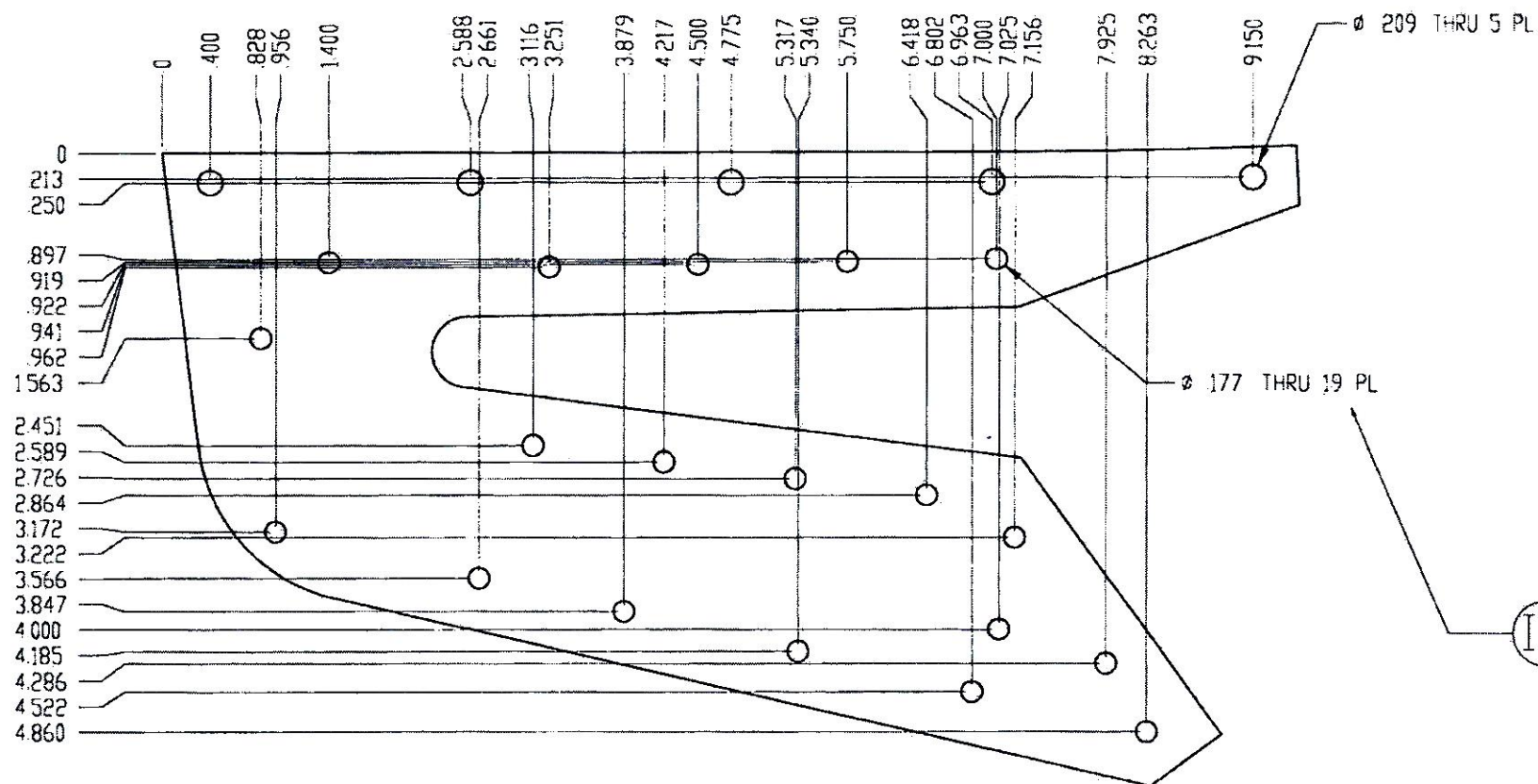


SHOP COPY  
 RETURN TO  
 ENGINEERING  
 UNCONTROLLED COPY  
 SUBJECT TO AMENDMENT  
 WITHOUT NOTICE  
 WORK ORDER  
 NO. 156806MCS  
 17-02-09

| 10                  | R  | 601.1541    | 19   | LOCKNUT                                                                                                                                                                                      | MS21042L08                                                                                  |
|---------------------|----|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 9                   | R  | 601.2764    | 38   | WASHER                                                                                                                                                                                       | NAS1149FN832P                                                                               |
| 8                   | R  | 601.2765    | 19   | SCREW                                                                                                                                                                                        | MS27039-0819                                                                                |
| 7                   | D  | 601.2766    | 2    | RIVET                                                                                                                                                                                        | MS20470AD5-18                                                                               |
|                     |    |             | 3001 |                                                                                                                                                                                              |                                                                                             |
| F/N                 | TC | PART NUMBER | QTY  | DESCRIPTION                                                                                                                                                                                  | MATERIAL/SPECIFICATION                                                                      |
| DOCUMENTS EFFECTED: |    |             |      | <input type="checkbox"/> MDL <input checked="" type="checkbox"/> INSTALL INSTRU <input checked="" type="checkbox"/> ICA <input type="checkbox"/> FMS <input checked="" type="checkbox"/> BOM | CHANGE CATEGORY<br><input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR |
|                     |    |             |      | DER REVIEW REQUIRED<br><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO                                                                                                   |                                                                                             |



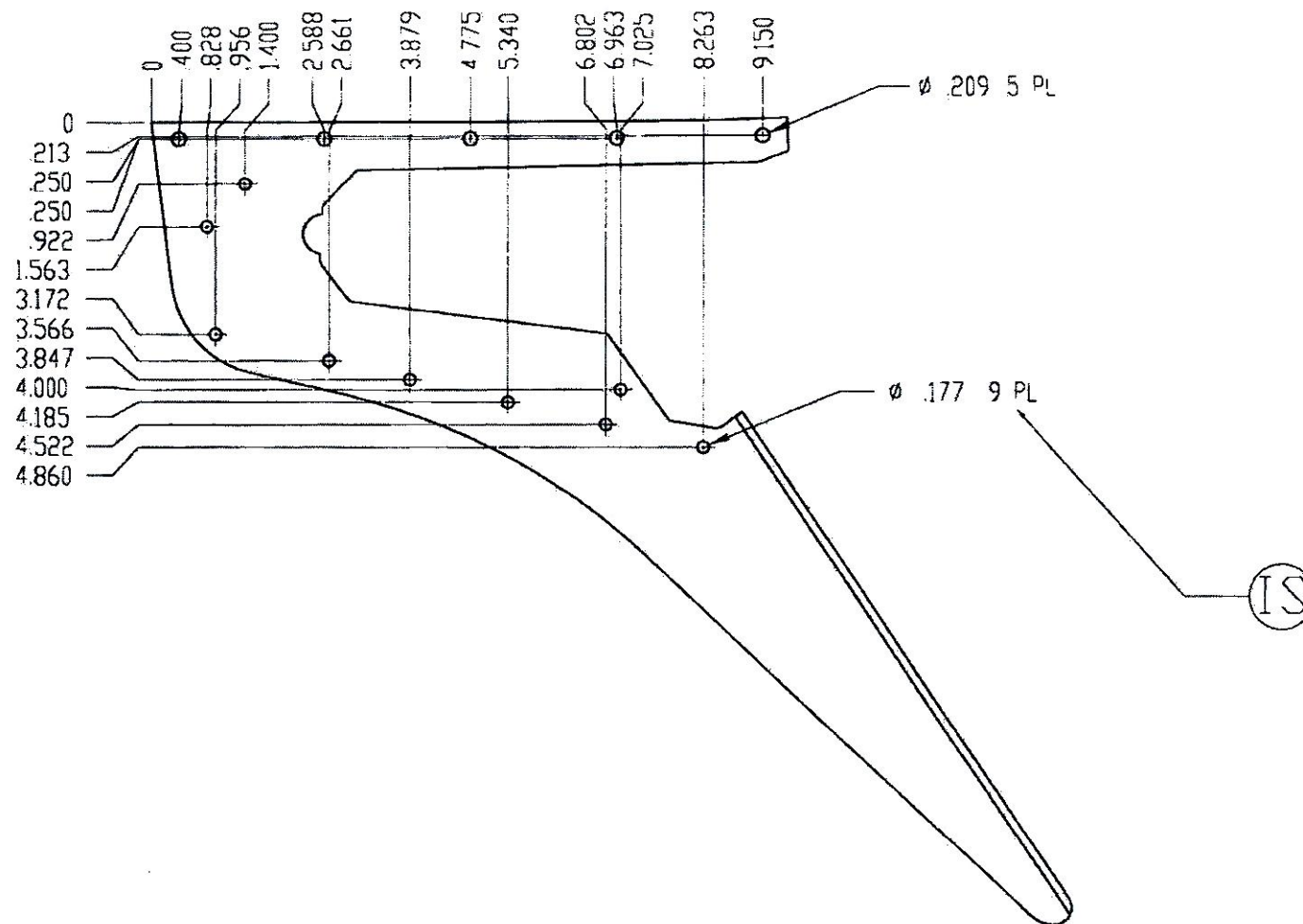
SHEET 3 IS:

SECTION A-A 

|    |
|----|
| 2  |
| C7 |

| F/N | TC | PART NUMBER | QTY | DESCRIPTION | MATERIAL/SPECIFICATION |
|-----|----|-------------|-----|-------------|------------------------|
|     |    |             |     |             |                        |



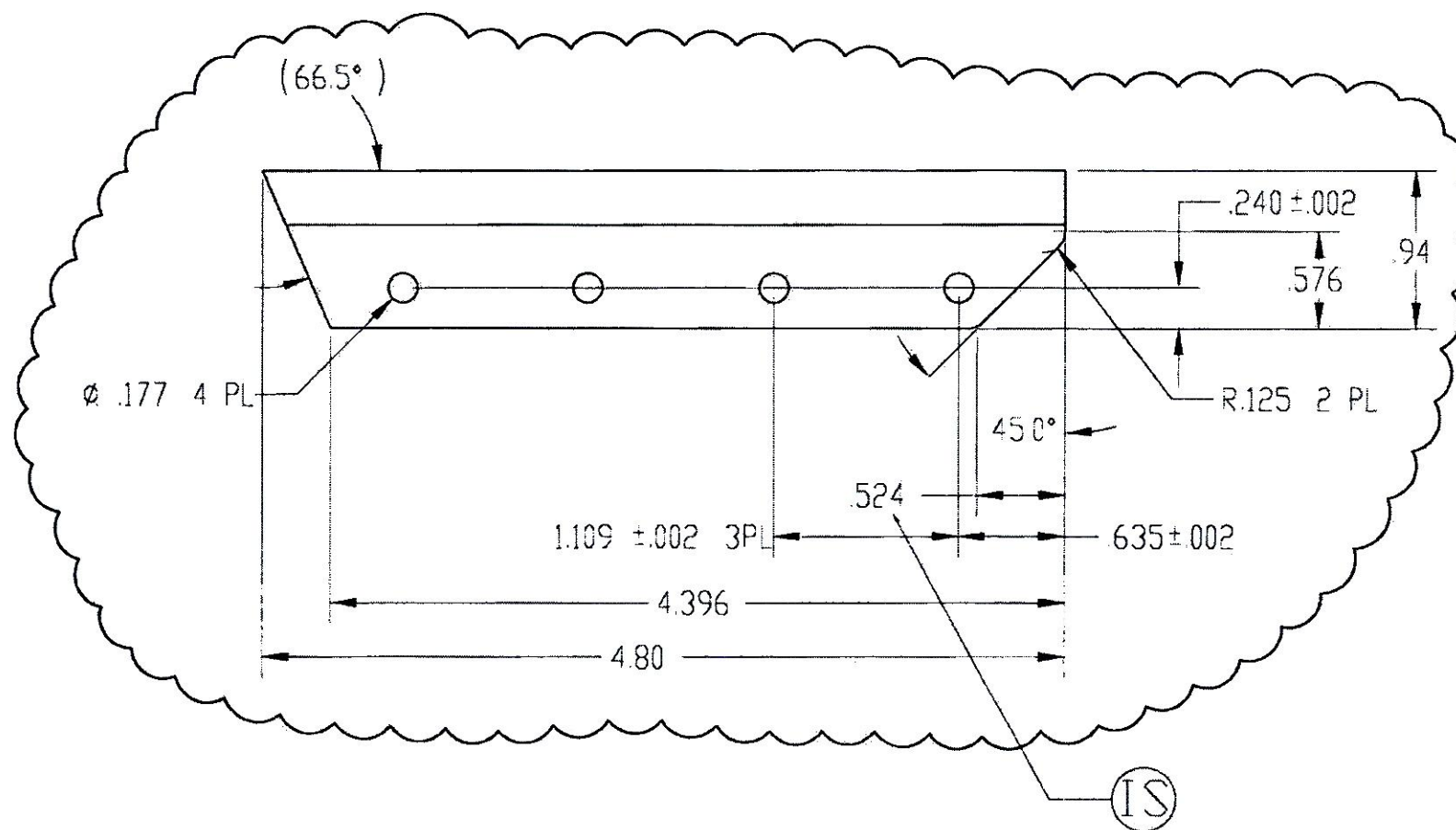
SHEET 5 IS:

SECTION F-F



| F/N | TC | PART NUMBER | QTY | DESCRIPTION | MATERIAL/SPECIFICATION |
|-----|----|-------------|-----|-------------|------------------------|
|-----|----|-------------|-----|-------------|------------------------|

SHEET 6, ZONE C4, IS:

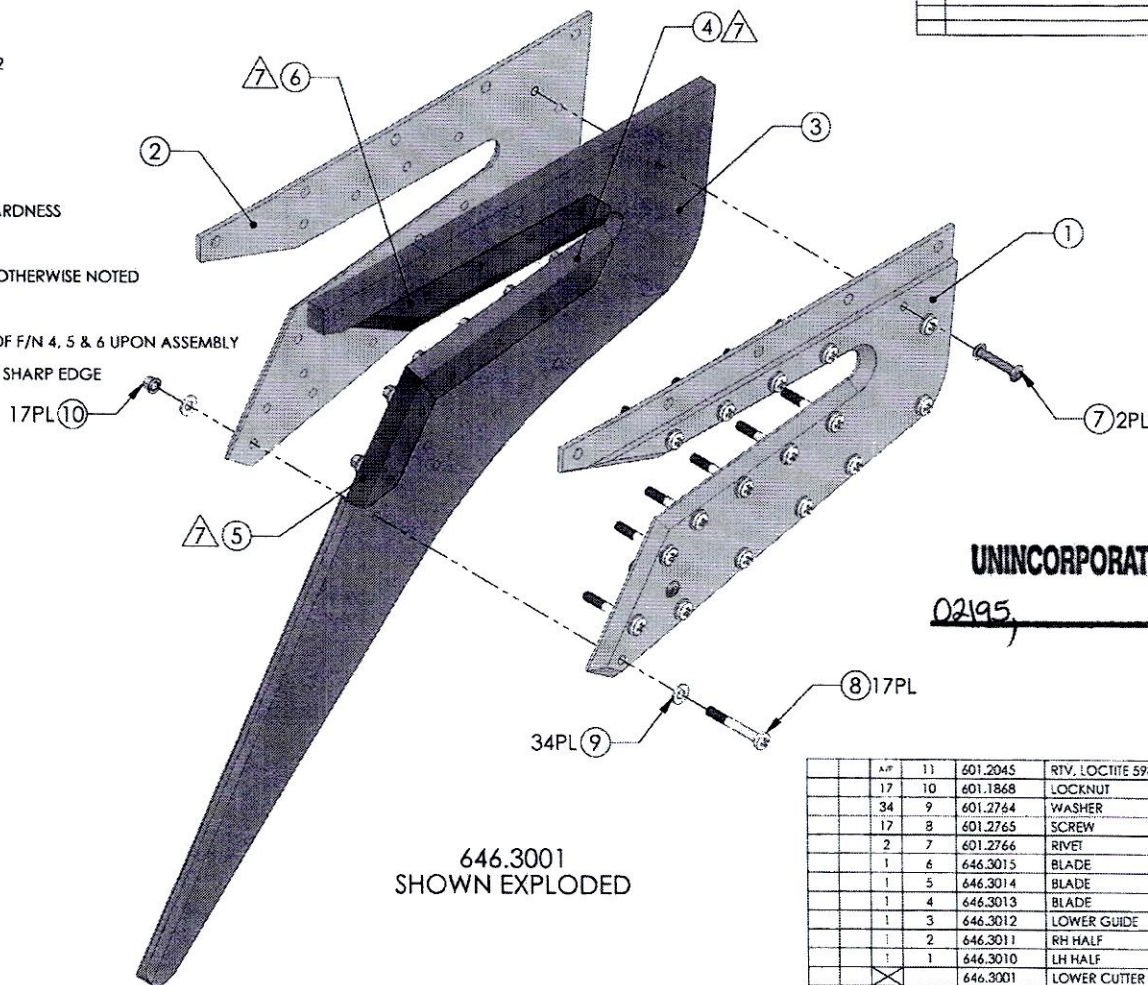


| F/N | TC | PART NUMBER | QTY | DESCRIPTION | MATERIAL/SPECIFICATION |
|-----|----|-------------|-----|-------------|------------------------|
|     |    |             |     |             |                        |

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

# NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
- 3 MATERIAL: AISI A2 TOOL STEEL  
CONDITION: ANNEALED  
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 11 AS REQUIRED TO ALL FAYING SURFACES OF F/N 4, 5 & 6 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE



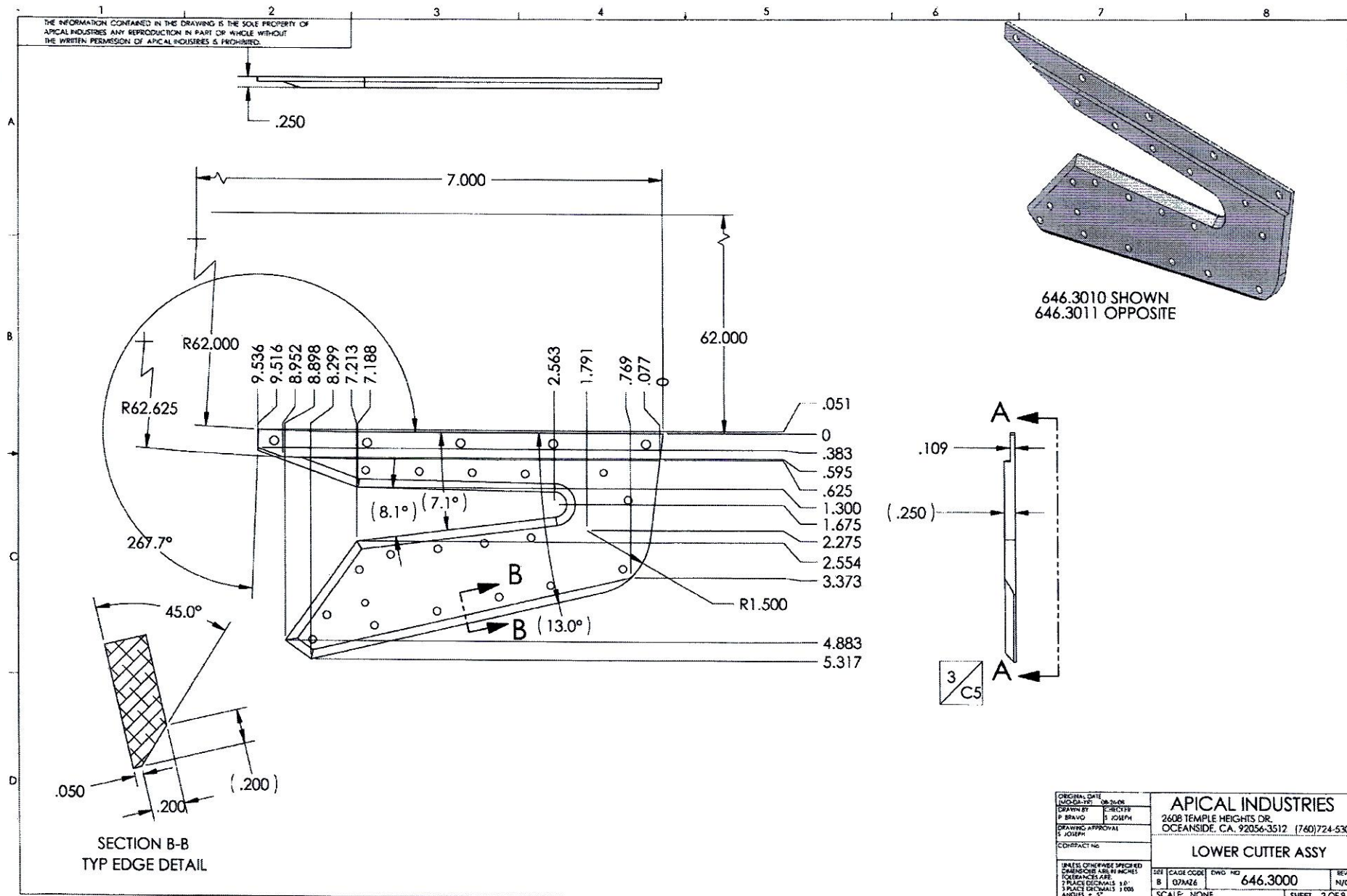
UNINCORPORATED ECN(s)

02195

| QTY                                     | REV       | FIND #   | PART #   | DESCRIPTION       | MATL      | SPEC. |
|-----------------------------------------|-----------|----------|----------|-------------------|-----------|-------|
| 17                                      | 10        |          | 601.2045 | RTV, LOCTITE 598  |           |       |
| 34                                      | 9         |          | 601.1868 | LOCKNUT           | M22104300 |       |
| 17                                      | 8         |          | 601.2764 | WASHER            | M22104300 |       |
| 2                                       | 7         |          | 601.2765 | SCREW             | M22104300 |       |
| 1                                       | 6         |          | 601.2766 | RIVET             | M22104300 |       |
| 1                                       | 5         |          | 646.3015 | BLADE             |           |       |
| 1                                       | 4         |          | 646.3014 | BLADE             |           |       |
| 1                                       | 3         |          | 646.3013 | BLADE             |           |       |
| 1                                       | 2         |          | 646.3012 | LOWER GUIDE       |           |       |
| 1                                       | 1         |          | 646.3011 | RH HALF           |           |       |
| 1                                       |           |          | 646.3010 | LH HALF           |           |       |
|                                         |           |          | 646.3001 | LOWER CUTTER ASSY |           |       |
| PARTS LIST                              |           |          |          |                   |           |       |
| APICAL INDUSTRIES                       |           |          |          |                   |           |       |
| 2608 TEMPLE HEIGHTS DR.                 |           |          |          |                   |           |       |
| OCEANSIDE, CA. 92056-3512 (760)724-5300 |           |          |          |                   |           |       |
| LOWER CUTTER ASSY                       |           |          |          |                   |           |       |
| REV                                     | CAGE CODE | DWG. NO. | REV      |                   |           |       |
| B                                       | 07M26     | 646.3000 | N/C      |                   |           |       |
| SCALE: NONE                             |           |          |          | SHEET 1 OF 8      |           |       |

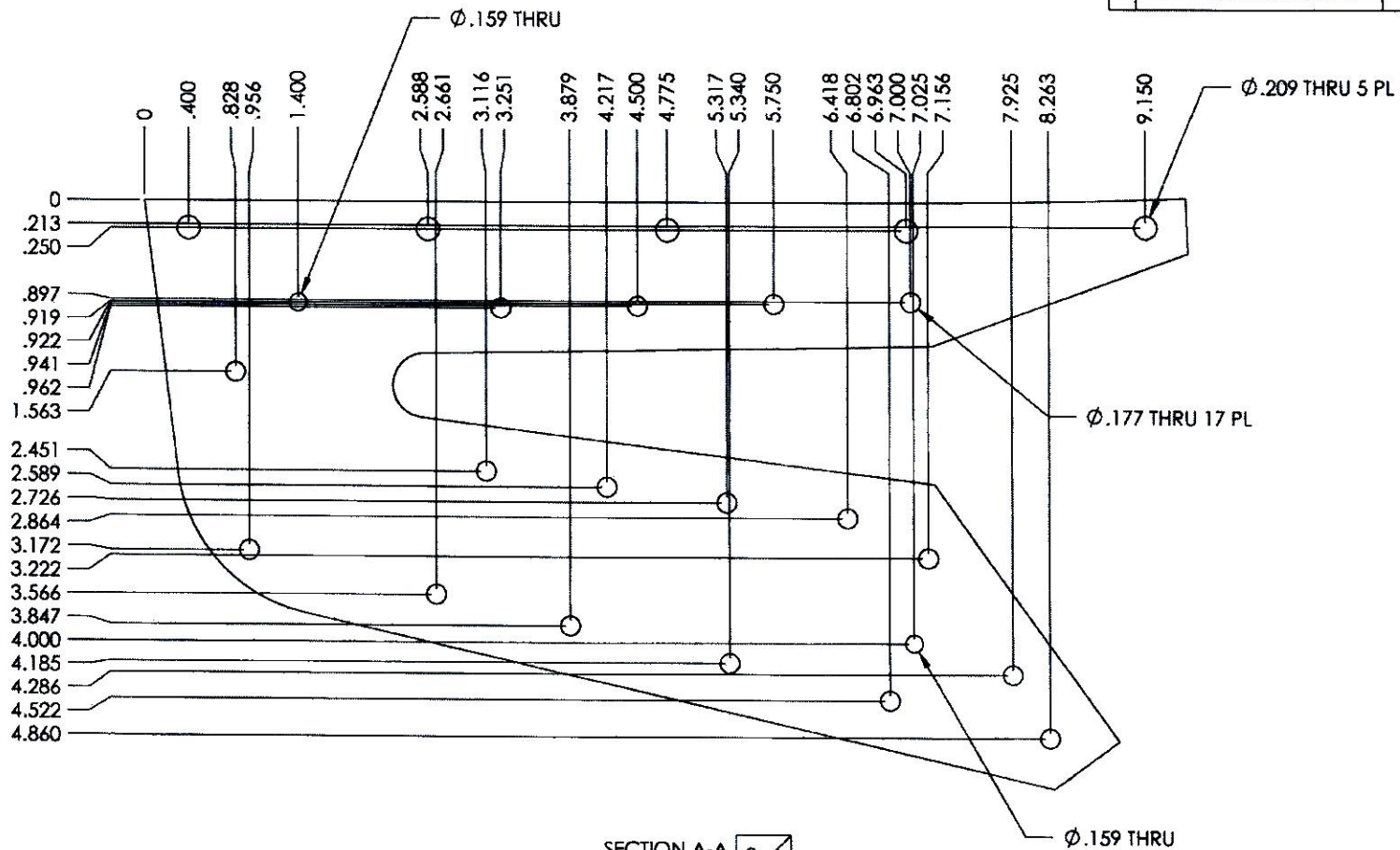


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| REVISIONS |             |      |          |
|-----------|-------------|------|----------|
| REV       | DESCRIPTION | DATE | APPROVED |
|           |             |      |          |
|           |             |      |          |

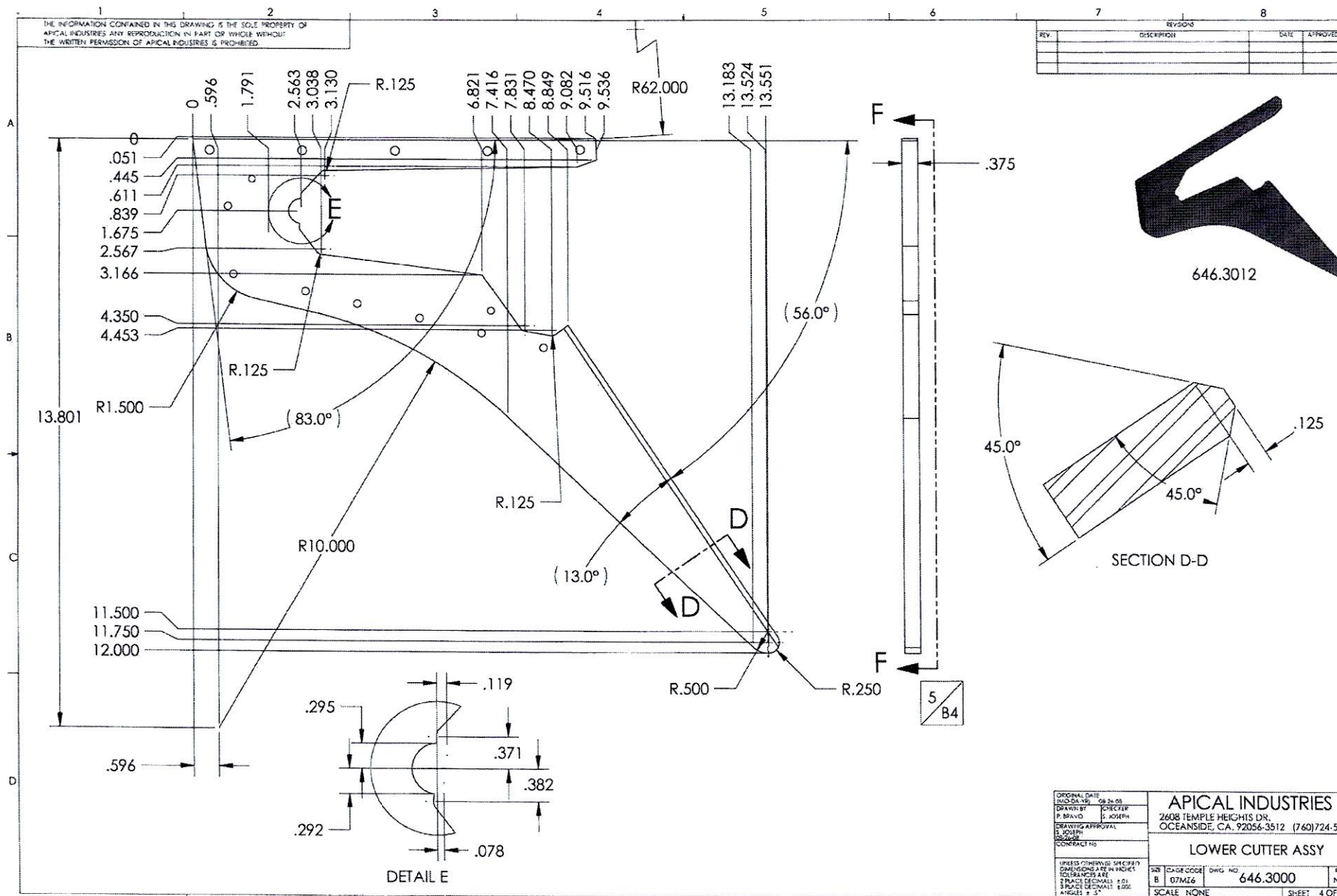


SECTION A-A

|                                                                                                                                             |                    |                    |             |                                                                                         |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|-------------|-----------------------------------------------------------------------------------------|--|--|--|
| ORIGINAL DATE<br>10/20/11 08:28<br>DRAWN BY<br>P. MAYO<br>DRAWING APPROVAL<br>S. COHEN<br>CHECKED BY                                        |                    |                    |             | APICAL INDUSTRIES<br>2608 TEMPLE HEIGHTS DR.<br>OCEANSIDE, CA. 92056-3512 (760)724-5300 |  |  |  |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ARE:<br>1 PLACE DECIMALS ±.01<br>2 PLACE DECIMALS ±.005<br>ANGLES ± 3° |                    |                    |             | LOWER CUTTER ASSY                                                                       |  |  |  |
| SIZE<br>B                                                                                                                                   | ICAD CODE<br>07M06 | DWG NO<br>646.3000 | REV.<br>N/C | SCALE NONE                                                                              |  |  |  |
| SHEET 3 OF 3                                                                                                                                |                    |                    |             |                                                                                         |  |  |  |

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| REVISIONS |             |      |          |
|-----------|-------------|------|----------|
| REV.      | DESCRIPTION | DATE | APPROVED |
|           |             |      |          |
|           |             |      |          |

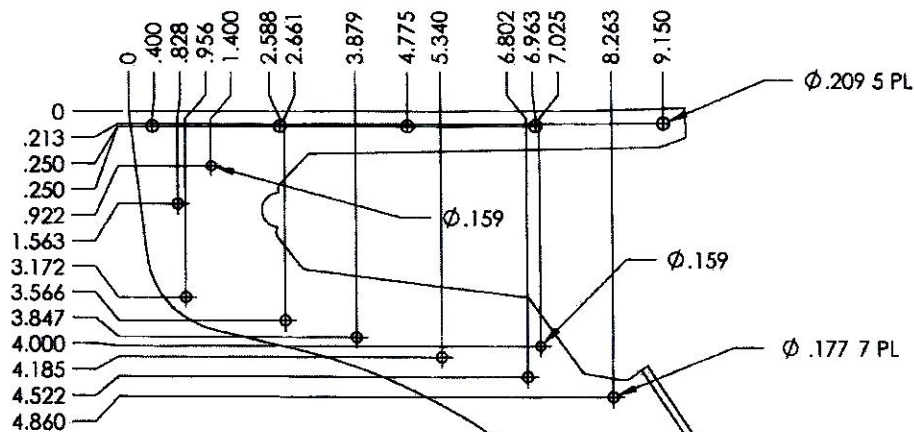


|                                                                                                                                           |  |                                                                     |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------|-----------------|
| ORIGINAL DATE<br>08-26-05                                                                                                                 |  | APICAL INDUSTRIES                                                   |                 |
| DRAWN BY<br>P. BRAVO                                                                                                                      |  | 2608 TEMPLE HEIGHTS DR.<br>OCEANSIDE, CA. 92056-3512 (760) 724-5300 |                 |
| CHECKED BY<br>J. JOSEPH                                                                                                                   |  | LOWER CUTTER ASSY                                                   |                 |
| DRAWING APPROVAL                                                                                                                          |  | DWG NO.<br>646.3000                                                 | REV.<br>N/C     |
| CONTRACT NO.                                                                                                                              |  | SCALE<br>NONE                                                       | SHEET<br>4 OF 8 |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ARE<br>2 PLACE DECIMALS ±.01<br>SPACES OF SMALL: .001<br>ANGLES ±.5° |  |                                                                     |                 |



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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED

| REV | DESCRIPTION | DATE | APPROVED |
|-----|-------------|------|----------|
|     |             |      |          |
|     |             |      |          |
|     |             |      |          |

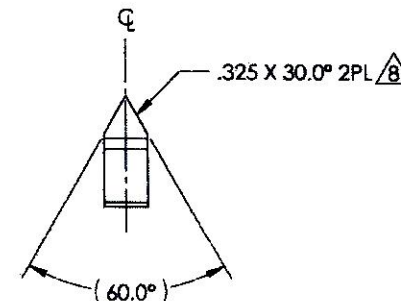
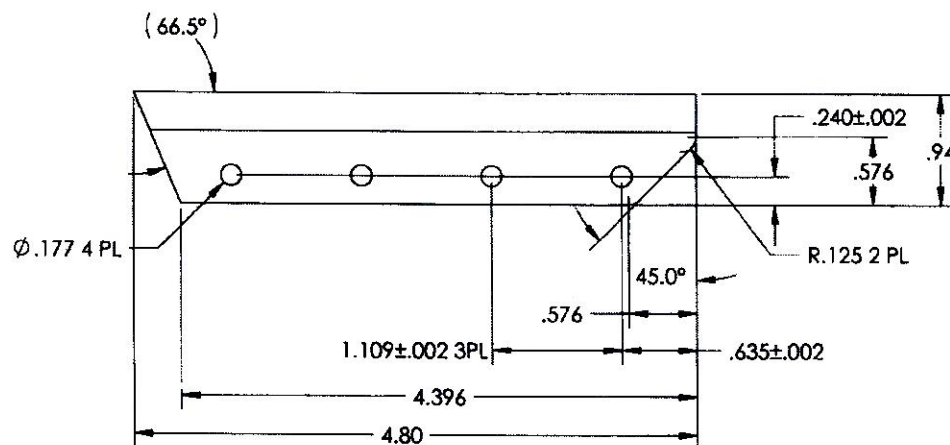
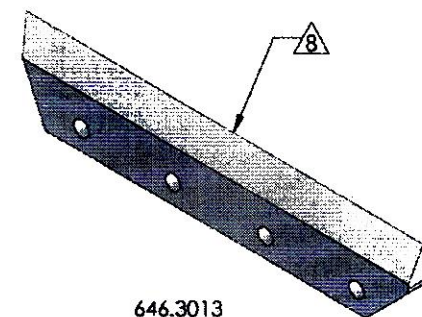
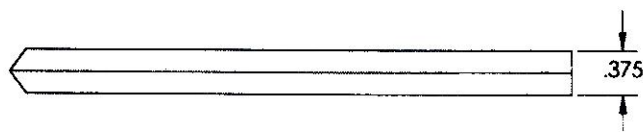


SECTION F-F  $\frac{4}{B6}$

|                                                                                                        |          |                                                                                         |      |
|--------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------|------|
| ORIGINAL DATE<br>DESIGNED BY<br>DRAWN BY<br>CHECKED BY<br>APPROVED BY<br>DATE                          |          | APICAL INDUSTRIES<br>2608 TEMPLE HEIGHTS DR.<br>OCEANSIDE, CA. 92056-3512 (760)724-5300 |      |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ARE:<br>FRACTIONS DECIMALS ANGLES |          | LOWER CUTTER ASSY                                                                       |      |
| REV                                                                                                    | DWG CODE | OWS NO.                                                                                 | REV. |
| 1                                                                                                      | 07M26    | 646.3000                                                                                | N/C  |
| SCALE NONE                                                                                             |          | SHEET 5 OF 6                                                                            |      |

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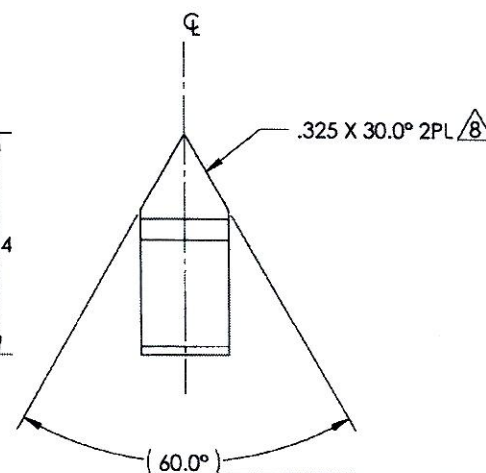
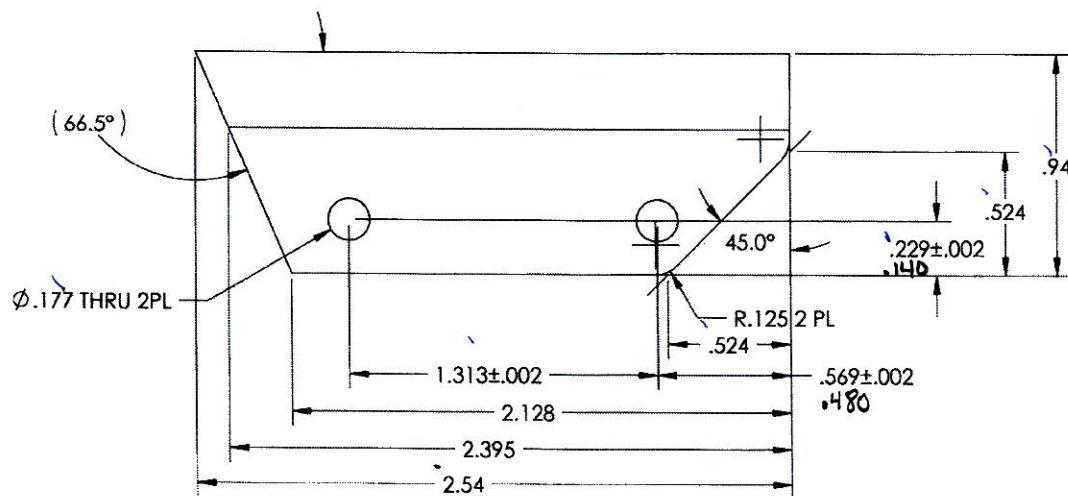
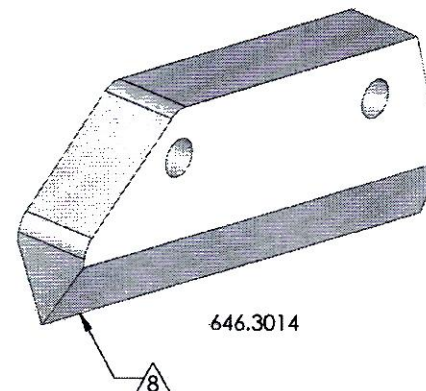
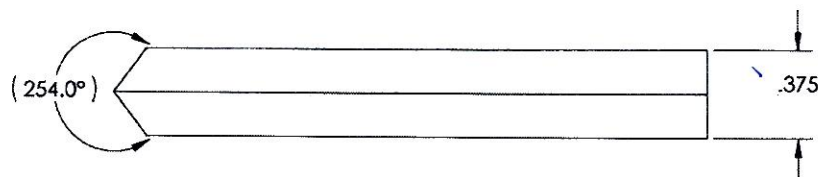
| REVISIONS |             |      |          |
|-----------|-------------|------|----------|
| REV       | DESCRIPTION | DATE | APPROVED |
|           |             |      |          |
|           |             |      |          |



|                                                                                                                                          |          |                                                                                         |     |
|------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------|-----|
| ORIGINAL DATE<br>APPROVED BY<br>DRAWN BY<br>CHECKED BY<br>DATE<br>APPROVED BY<br>DATE                                                    |          | APICAL INDUSTRIES<br>2608 TEMPLE HEIGHTS DR.<br>OCEANSIDE, CA. 92056-3512 (760)724-5300 |     |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES<br>2 PLACES DECIMALS ±.01<br>3 PLACES DECIMALS ±.001<br>ANGLES ±.5° |          | LOWER CUTTER ASSY                                                                       |     |
| REV                                                                                                                                      | CHG CODE | DATE                                                                                    | BY  |
| B                                                                                                                                        | 07/01/06 | 646.3000                                                                                | NJC |
| SCALE: NONE                                                                                                                              |          | SHEET 6 OF 8                                                                            |     |

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| REV. | DESCRIPTION | DATE | APPROVED |
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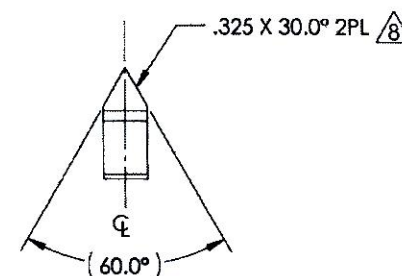
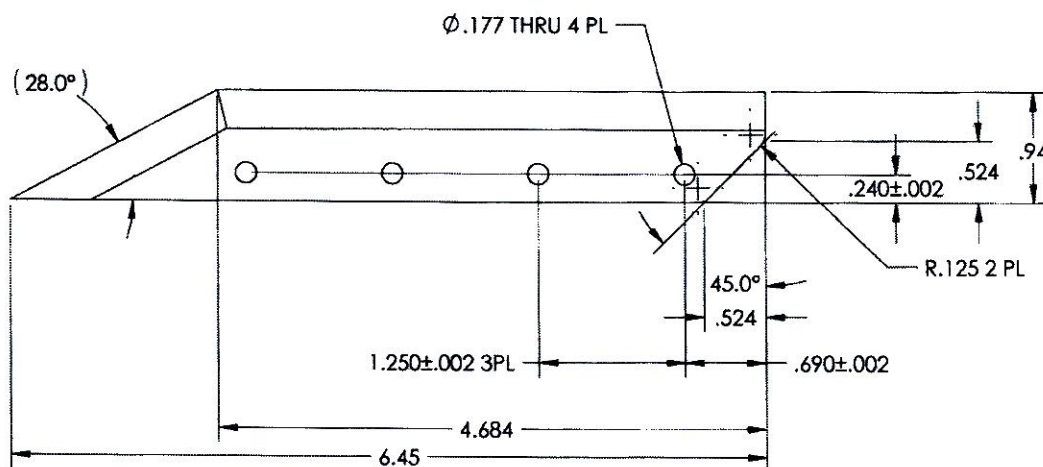
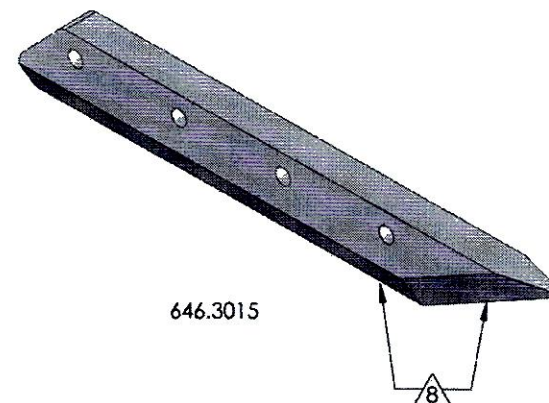
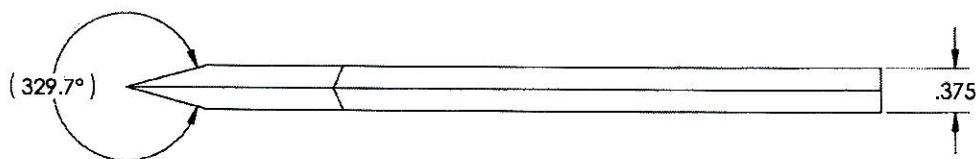


|                                                                                                                                         |           |          |     |                                                                                         |  |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|-----|-----------------------------------------------------------------------------------------|--|
| ORIGINAL DATE 08-28-08<br>DRAWN BY J. JOSEPH<br>P. BRAYO<br>DRAWING APPROVAL<br>J. JOSEPH<br>08-28-08<br>CHECKED BY                     |           |          |     | APICAL INDUSTRIES<br>2608 TEMPLE HEIGHTS DR.<br>OCEANSIDE, CA. 92056-3512 (760)724-5300 |  |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ARE<br>2 PLACE DECIMALS FID<br>3 PLACE DECIMALS FID<br>ANGLES ± 1° |           |          |     | LOWER CUTTER ASSY                                                                       |  |
| REV.                                                                                                                                    | CAGE CODE | DWG. NO. | PIN | 646.3000                                                                                |  |
| B                                                                                                                                       | 07M26     |          | N/C |                                                                                         |  |
| SCALE NONE                                                                                                                              |           |          |     | SHEET 7 OF 8                                                                            |  |



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| REV | DESCRIPTION | DATE | APPROVED |
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|     |             |      |          |



|                                                                                                                                             |          |                                                                                         |     |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------|-----|
| ORIGINAL DATE<br>DESIGN YR. 08-2008<br>DESIGNED BY J. JOSEPH<br>P. BRAYO<br>DRAWING APPROVAL<br>J. JOSEPH<br>CONTRACT NO.                   |          | APICAL INDUSTRIES<br>2608 TEMPLE HEIGHTS DR.<br>OCEANSIDE, CA. 92056-3512 (760)724-5300 |     |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ARE:<br>2 PLACE DECIMALS ±.01<br>3 PLACE DECIMALS ±.005<br>ANGLES ± 5° |          | LOWER CUTTER ASSY                                                                       |     |
| REV                                                                                                                                         | DATE     | DWG. NO.                                                                                | REV |
| B                                                                                                                                           | 07/02/06 | 646.3000                                                                                | N/C |
| SCALE NONE                                                                                                                                  |          | SHEET 8 OF 8                                                                            |     |



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO35475

Purchase Order Date 3/1/2017

PO Print Date 3/1/2017

Page Number 1 of 3

**Order From :**

VC-MET004

**Ship To :** DART AEROSPACE LTD

METCOR INC.  
560 BOUL. ARTHUR SAUVE  
SAINT-EUSTACHE, QC J7R 5A8  
CA

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

E-MAILED

MAR 01 2017

**Contact Name**

**Vendor Phone** 450 473 1884

**Ship To Contact**

**Ship To Phone**

**Ship Via:** FedEx Economy collect

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

CAD

**FOB**

FCA - (Free Carrier)

| Line Nbr | Reference Vendor Part Number | Description/ Mfg ID | Req Date/ Taxable             | CD | Req Qty/ Unit of Measure | PO Unit Price | Extended Price |
|----------|------------------------------|---------------------|-------------------------------|----|--------------------------|---------------|----------------|
|          | Line Comments                |                     | Promise Date                  |    |                          |               |                |
|          | Delivery Comments            |                     |                               |    |                          |               |                |
| 1        | 156806                       | 646.3014 BLADE      | 3/15/2017<br>Yes<br>3/15/2017 |    | 10.00                    | \$5.90        | \$59.00        |

FINISH: HEAT TREAT TO 58-62 RC  
ROCKWELL HARDNESS

PART ARE MADE FROM AISI A2 TOOL STEEL

PLEASE NOTE: DETAIL C OF C REQUIRED

SP17-03-9

Line Total: \$59.00

|   |        |                |                               |  |       |        |         |
|---|--------|----------------|-------------------------------|--|-------|--------|---------|
| 2 | 156837 | 646.3015 BLADE | 3/15/2017<br>Yes<br>3/15/2017 |  | 10.00 | \$5.90 | \$59.00 |
|---|--------|----------------|-------------------------------|--|-------|--------|---------|

FINISH: HEAT TREAT TO 58-62 RC  
ROCKWELL HARDNESS

PART ARE MADE FROM AISI A2 TOOL STEEL

PLEASE NOTE: DETAIL C OF C REQUIRED

Note:

3/1/2017

# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ  
ST-EUSTACHE, QC J7R 5A8  
Tel: 450-473-1884 / Fax: 450-491-5498

## Reçu de livraison

Delivery Receipt

| BON DE TRAVAIL<br>Order | EXPÉDITEUR<br>Shipper ID | BON D'EXPÉDITION<br>Shipper |
|-------------------------|--------------------------|-----------------------------|
| 317526                  | 1                        | 117886                      |

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

**DART AEROSPACE**  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
Ph: 613-632-5200  
Fax: 613-632-1053



LIVRÉ À /Shipped To

**DART AEROSPACE**  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
Ph: 613-632-5200  
Fax: 613-632-1053

| COMMANDE DU CLIENT<br>Customer PO | BON DE LIVRAISON DU CLIENT<br>Customer Shipper No. | TYPE DE MATÉRIEL<br>Material Type | DATE DE LA COMMANDE<br>Order Date | TRANSPORTEUR<br>Carrier |
|-----------------------------------|----------------------------------------------------|-----------------------------------|-----------------------------------|-------------------------|
| 35475                             |                                                    | A2                                | 2017/3/2                          | FEDEX                   |

| QUANTITÉ<br>Quantity | No. PIÈCE /<br>Part No. | NOM DE LA PIÈCE /<br>Part Name | DESCRIPTION DE LA PIÈCE<br>Part Description | POIDS<br>Weight |
|----------------------|-------------------------|--------------------------------|---------------------------------------------|-----------------|
|----------------------|-------------------------|--------------------------------|---------------------------------------------|-----------------|

50 646.3014 BLADE

(10) 646.3014 156806

(10) 646.3015 156837

(10) 646.3315 156852

(10) 646.3316 156804

(10) 646.9711 156758

14,3

1 VALISE

SP17-03-9.

| TYPE DE CONTENEUR<br>Container Type | # DE CONTENEURS<br># Of Containers | COMMENTAIRES CONTENEUR<br>Container Comments |
|-------------------------------------|------------------------------------|----------------------------------------------|
| VALISE                              | 1                                  |                                              |

certificat

|                        |  |
|------------------------|--|
| EMPAQUETAGE<br>Packing |  |
|------------------------|--|

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 50

POIDS EXPÉDIÉ / Weight Shipped : 14,30

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

certificat

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 50

POIDS EXPÉDIÉ / Weight Shipped : 14,30

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2017/03/07



# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 6A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

## Certificat de Conformité Certificate of Compliance

| BON DE TRAVAIL<br>order | CHARGEMENT<br>load |
|-------------------------|--------------------|
| 317526                  | 1                  |

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

| COMMANDE DU CLIENT<br>customer po                             | CLASSIFICATION PIECE<br>part classification | MATÉRIEL<br>material                                                                                                                                   | MAÎTRE D'OEUVRE<br>prime contractor | PROGRAM |
|---------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------|
| 35475                                                         | N/A                                         | A2                                                                                                                                                     |                                     |         |
| <b>SPÉCIFICATIONS DU PROCÉDÉ</b><br>processing specifications |                                             |                                                                                                                                                        |                                     |         |
| VAC HARDEN                                                    |                                             |                                                                                                                                                        |                                     |         |
| HARDEN AND TEMPER                                             |                                             |                                                                                                                                                        |                                     |         |
| EXIGENCE / requirement                                        | SPÉCIFICATIONS / specified                  | TESTS EXÉCUTÉS / performed                                                                                                                             | RÉSULTATS DE TESTS / results        |         |
| HARDNESS                                                      | 58 - 62 HRC                                 | 5                                                                                                                                                      | 60 - 62 HRC                         |         |
| QUANTITÉ<br>quantity                                          | POIDS<br>weight                             | DESCRIPTION DES PIÈCES<br>parts description                                                                                                            |                                     |         |
| 50                                                            | 14,3                                        | 646.3014 BLADE<br>(10) 646.3014 156806<br>(10) 646.3015 156837<br>(10) 646.3315 156852<br>(10) 646.3316 156804<br>(10) 646.9711 156758<br><br>1 VALISE |                                     |         |

COMMENTAIRES / comments

10 MARS

APPROUVÉ par / Approved by:

DATE: 2017-03-07

Pierre Piché  
Chief Inspector

METCOR  
6

APPROUVÉ  
ACB

# METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

## Certificat de Conformité Détaillé

Detailed Certificate of Compliance

| BON DE TRAVAIL<br>order | CHARGEMENT<br>load |
|-------------------------|--------------------|
| 317526                  | 1                  |

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

| COMMANDE DU CLIENT<br>customer po                                         | CLASSIFICATION PIECE<br>part classification | MATÉRIEL<br>material                                                                                                                                     | MAÎTRE D'OEUVRE<br>prime contractor | PROGRAM |
|---------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------|
| 35475                                                                     | N/A                                         | A2                                                                                                                                                       |                                     |         |
| <div>SPÉCIFICATIONS DU PROCÉDÉ</div> <div>processing specifications</div> |                                             |                                                                                                                                                          |                                     |         |
| VAC HARDEN                                                                |                                             |                                                                                                                                                          |                                     |         |
| HARDEN AND TEMPER                                                         |                                             |                                                                                                                                                          |                                     |         |
| EXIGENCE / requirement                                                    | SPÉCIFICATIONS / specified                  | TESTS EXÉCUTÉS / performed                                                                                                                               | RÉSULTATS DE TESTS / results        |         |
| HARDNESS                                                                  | 58 - 62 HRC                                 | 5                                                                                                                                                        | 60 - 62 HRC                         |         |
| QUANTITÉ<br>quantity                                                      | POIDS<br>weight                             | DESCRIPTION DES PIÈCES<br>parts description                                                                                                              |                                     |         |
| 50                                                                        | 14.3                                        | 646.3014 BLADE<br>(10) 646.3014 156806 ✓<br>(10) 646.3015 156837<br>(10) 646.3315 156852<br>(10) 646.3316 156804<br>(10) 646.9711 156758<br><br>1 VALISE |                                     |         |

### COMMENTAIRES / comments

VAC HARDEN 1800F, 1:30 HR  
DOUBLE TEMPER 400F, 2 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

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MAD 07 2017

Isabel Otero

METCOR